

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Original) A method reducing signal distortion in a multiple line transmission system, the method comprising:

using one or more split-pair receivers in a multiline communications system to identify crosstalk on a pair of transceivers coupled to the split-pair receivers, wherein each split pair receiver receives a signal including the crosstalk from each transceiver and provides a corresponding signal vector to a post processing unit; and

performing MIMO post-processing on signal vectors received at a receiver from each transceiver and each split-pair receiver while minimizing crosstalk on pairs of lines in the multiline communications system with a frequency equalizer.

2. (New) The method of claim 1, further comprising:

connecting a first input of a first split-pair receiver to a tip of a first transceiver of the pair of transceivers;

connecting a second input of the first split-pair receiver to ring of a second transceiver of the pair of transceivers; and

connecting an output of the first split-pair receiver to the post processing unit.

3. (New) The method of claim 2, further comprising:

connecting a first input of a second split-pair receiver to a ring of the first transceiver of the pair of transceivers;

connecting a second input of the second split-pair receiver to a tip of the second transceiver of the pair of transceivers; and

connecting an output of the second split-pair receiver to the post processing unit.

4. (New) The method of claim 1, further comprising:
- connecting a first input of a first split-pair receiver to a ring of a first transceiver of the pair of transceivers;
  - connecting a second input of the first split-pair receiver to a ring of a second transceiver of the pair of transceivers; and
  - connecting an output of the first split-pair receiver to the post processing unit.
5. (New) A multiline communication system for reducing signal distortion, the system comprising:
- a first and second pair of lines in the multiline communication system;
  - a first and second transceiver electrically connected to the corresponding first and second pair of lines;
  - a split-pair receiver electrically connected to a line of the first pair of lines and a line of the second pair of lines and configured to identify crosstalk on the first and second transceivers;
  - a frequency equalizer; and
  - a post-processing unit configured to perform MIMO post-processing on signal vectors received at each transceiver of the pair of transceivers and the split-pair receiver, wherein the split-pair receiver receives a signal including the crosstalk from the first and second transceivers and provides a corresponding signal vector to the post-processing unit, and wherein the post processing unit is further configured to minimize crosstalk on the first and second pair of lines in the multiline communication system with the frequency equalizer.
6. (New) The system of claim 5, further comprising:
- a first and second analog front end circuit electrically connected to the respective first and second pair of lines in the multiline communication system and the respective first and second transceivers.

7. (New)      The system of claim 5, wherein the first and second pair of lines comprise:  
a twisted pair of copper lines.
8. (New)      The system of claim 5, wherein the line of the first pair of lines is a transmitting  
line and the line of the second pair of lines is a receiving line.
9. (New)      The system of claim 5, wherein the line of the first pair of lines is a transmitting  
line and the line of the second pair of lines is a transmitting line.
10. (New)     The system of claim 5, wherein the split-pair receiver is a first split pair receiver,  
the system further comprising:  
a second split-pair receiver electrically connected to a receiving line of the first  
pair of lines and a transmitting line of the second pair of lines, and  
wherein the first split-pair receiver is electrically connected to a transmitting line  
of the first pair of lines and a receiving line of the second pair of lines.